

EXHIBIT 11

THE **#1**
BESTSELLING GUIDE TO
CORPORATE VALUATION

OVER
800,000
COPIES
SOLD

VALUATION

SEVENTH **7** EDITION

MEASURING AND MANAGING THE
VALUE OF COMPANIES

TIM KOLLER • MARC GOEDHART • DAVID WESSELS

MCKINSEY & COMPANY

VALUATION

MEASURING AND MANAGING THE VALUE OF COMPANIES

SEVENTH EDITION

McKinsey & Company

Tim Koller

Marc Goedhart

David Wessels

WILEY

Cover design: Wiley

Copyright © 1990, 1994, 2000, 2005, 2010, 2015, 2020 by McKinsey & Company. All rights reserved.

Published by John Wiley & Sons, Inc., Hoboken, New Jersey.

Published simultaneously in Canada.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600, or on the Web at www.copyright.com. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at <http://www.wiley.com/go/permissions>.

Limit of Liability/Disclaimer of Warranty: While the publisher and author have used their best efforts in preparing this book, they make no representations or warranties with respect to the accuracy or completeness of the contents of this book and specifically disclaim any implied warranties of merchantability or fitness for a particular purpose. No warranty may be created or extended by sales representatives or written sales materials. The advice and strategies contained herein may not be suitable for your situation. You should consult with a professional where appropriate. Neither the publisher nor author shall be liable for any loss of profit or any other commercial damages, including but not limited to special, incidental, consequential, or other damages.

For general information on our other products and services or for technical support, please contact our Customer Care Department within the United States at (800) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.

Wiley publishes in a variety of print and electronic formats and by print-on-demand. Some material included with standard print versions of this book may not be included in e-books or in print-on-demand. If this book refers to media such as a CD or DVD that is not included in the version you purchased, you may download this material at <http://booksupport.wiley.com>. For more information about Wiley products, visit www.wiley.com.

Library of Congress Cataloging-in-Publication Data

Names: McKinsey and Company. | Koller, Tim, author. | Goedhart, Marc H., author. | Wessels, David, author.

Title: Valuation : measuring and managing the value of companies / McKinsey & Company, Tim Koller, Marc Goedhart, David Wessels.

Description: Seventh edition. | Hoboken, New Jersey: Wiley, [2020] |

Series: Wiley finance | First edition entered under: Copeland, Thomas E.

Identifiers: LCCN 2020013692 (print) | LCCN 2020013693 (ebook) | ISBN 978-1-119-61088-5 (Hardcover) | ISBN 978-1-119-61087-8 (ePDF) | ISBN 978-1-119-61092-2 (ePub) | ISBN 978-1-119-61186-8 (University Edition) | ISBN 978-1-119-61246-9 (Cloth edition with DCF Model Download) | ISBN 978-1-119-61181-3 (Workbook) | ISBN 978-1-119-61086-1 (DCF Model Download)

Subjects: LCSH: Corporations—Valuation—Handbooks, manuals, etc.

Classification: LCC HG4028.V3 C67 2020 (print) | LCC HG4028.V3 (ebook) | DDC 658.15—dc23

LC record available at <https://lcn.loc.gov/2020013692>

LC ebook record available at <https://lcn.loc.gov/2020013693>

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

40 FUNDAMENTAL PRINCIPLES OF VALUE CREATION

EXHIBIT 3.10 **Impact on Value of Improving Margin vs. Capital Productivity**

Increase in value from improving ROIC by 1 percentage point ¹			
% change			
ROIC, %	Through margin improvement	Through capital productivity	Ratio of margin impact to capital productivity impact
10	20.0	13.5	1.2x
20	6.7	2.9	2.3x
30	4.0	1.2	3.4x
40	2.9	0.6	4.6x

¹ For a company with a 9% cost of capital.

had low growth but increased their ROICs outperformed the faster-growing companies that did not improve their ROICs.

One final factor for management to consider is the method by which it chooses to improve ROIC. A company can increase ROIC by either improving profit margins or improving capital productivity. With respect to future growth, it doesn’t matter which of these paths a company emphasizes. But for current operations, at moderate ROIC levels, a one-percentage-point increase in ROIC through margin improvement will have a moderately higher impact on value relative to improving capital productivity. At high levels of ROIC, though, improving ROIC by increasing margins will create much more value than an equivalent ROIC increase by improving capital productivity. Exhibit 3.10 shows how this works for a company that has a 9 percent cost of capital.

The reason for this relationship is best explained by an example. Consider a company with zero growth, \$1,000 of revenues, \$100 of profits, and \$500 of invested capital (translating to a 10 percent margin, a 50 percent ratio of invested capital to revenues, and ROIC of 20 percent). One way to increase ROIC by one percentage point is to increase the profit margin to 10.5 percent, increasing profits by \$5. Since the company is not growing, the \$5 of extra profits translates to \$5 of cash flow each year going forward. Discounting at a 10 percent cost of capital, this represents a \$50 increase in value. The company could also increase ROIC by reducing working capital. If it reduced working capital by \$24, ROIC would increase to 21 percent (\$100 divided by \$476). The company’s value would increase only by the \$24 one-time cash inflow from reducing working capital. Future cash flows would not be affected.

ECONOMIC PROFIT COMBINES ROIC AND SIZE

You can also measure a company’s value creation using economic profit, a measure that combines ROIC and size into a currency metric (here we use the

ECONOMIC PROFIT COMBINES ROIC AND SIZE 41

U.S. dollar). Economic profit measures the value created by a company in a single period and is defined as follows:

$$\text{Economic Profit} = \text{Invested Capital} \times (\text{ROIC} - \text{Cost of Capital})$$

In other words, economic profit is the spread between the return on invested capital and the cost of capital times the amount of invested capital. Value Inc.'s economic profit for year 1 is \$50 (Value Inc. must have \$500 of starting capital if it earns \$100 at a 20 percent return in year 1):

$$\begin{aligned}\text{Economic Profit} &= \$500 \times (20\% - 10\%) \\ &= \$500 \times 10\% \\ &= \$50\end{aligned}$$

Volume Inc.'s economic profit in year 1 is zero (Volume Inc. must have \$1,000 of starting capital if it earns \$100 at a 10 percent return in year 1):

$$\begin{aligned}\text{Economic Profit} &= \$1,000 \times (10\% - 10\%) \\ &= \$1,000 \times 0\% \\ &= \$0\end{aligned}$$

You can also value a company by discounting its projected economic profit at the cost of capital and adding the starting invested capital. Value Inc. starts with \$500 of invested capital. Its economic profit in year 1 is \$50, which grows at 5 percent. Discounting the growing economic profit at a 10 percent discount rate gives a present value of economic profit of \$1,000.⁹ Use these amounts to solve for value:

$$\begin{aligned}\text{Value} &= \text{Starting Invested Capital} + \text{PV}(\text{Projected Economic Profit}) \\ &= \$500 + \$1,000 \\ &= \$1,500\end{aligned}$$

The value of Value Inc. using the economic-profit approach is \$1,500, exactly the same as with the discounted-cash-flow (DCF) approach.

Economic profit is also useful for comparing the value creation of different companies or business units. Consider Value Inc.'s economic profit of \$50. Suppose Big Inc. had \$5,000 in invested capital but earned only a 15 percent return on capital (and assume it doesn't have investment opportunities with

⁹ The present value of economic profit for a growing perpetuity is economic profit in year 1 divided by the cost of capital minus the growth rate. For Value Inc., the present value of economic profit is therefore $\$50 / (10\% - 5\%)$.

128 RETURN ON INVESTED CAPITAL

Webvan was an online grocery-delivery business based in California. In contrast to eBay, it had a capital-intensive business model involving substantial warehouses, trucks, and inventory. In addition, Webvan was competing with local grocery stores in selling products at very thin margins. The complexity and costs of making physical deliveries to customers within precise time frames more than offset Webvan's savings from not having physical stores. Finally, Webvan's business did not enjoy increasing returns to scale; as demand increased, it needed more food pickers, trucks, and drivers to serve customers.

From the outset, it was clear that eBay's business model had a sound and sustainable competitive advantage that permitted high returns. Webvan had no such advantage over its grocery store competitors. Whereas eBay's strategy was primed for success, Webvan's foreshadowed doom. In general, success in the online grocery business has since proven to be far more elusive than in other forms of online retail. For example, Amazon Fresh has faced challenges expanding beyond the most densely populated metropolitan areas. Amazon's 2017 acquisition of Whole Foods was one signal that in grocery, competition from traditional stores is hard to overcome.

The importance of ROIC is universal: it applies to companies as well as to businesses within companies. For example, within its retail business model, Amazon creates substantial revenues from third-party sellers using its online platform. Platform sales by third parties generate increasing returns to scale, more so than Amazon's direct sales. Platform sales require little invested capital, and Amazon's marginal cost of additional transactions is minimal. As a result, platform sales have become an important driver of Amazon's overall value creation.

This chapter explores how rates of return on invested capital depend on competitive advantage. We examine how strategy drives competitive advantage, which when properly fitted to industry structure and competitive behavior can produce and sustain a superior ROIC. This explains why some companies earn only a 10 percent ROIC while others earn 50 percent. The final part of the chapter presents 55 years of ROIC data by industry over time. This analysis shows how ROIC varies by industry and how rates of ROIC fluctuate or remain stable over time.

WHAT DRIVES ROIC?

To understand how strategy, competitive advantage, and return on invested capital are linked, consider the following representation of ROIC:

$$\text{ROIC} = (1 - \text{Tax Rate}) \frac{\text{Price per Unit} - \text{Cost per Unit}}{\text{Invested Capital per Unit}}$$

This version of ROIC simply translates the typical formula of net operating profit after taxes (NOPAT) divided by invested capital into a per unit calculation: price per unit, cost per unit, and invested capital per unit.¹ To earn a higher ROIC, a company needs a competitive advantage that enables it to charge a price premium or produce its products more efficiently (at lower cost, lower capital per unit, or both). A company's competitive advantage depends on its chosen strategy and the industry in which it operates.

The strategy model that underlies our thinking about what drives competitive advantage and ROIC is the structure-conduct-performance (SCP) framework. According to this framework, the structure of an industry influences the conduct of the competitors, which in turn drives the performance of the companies in the industry. Originally developed in the 1930s by Edward Mason, this framework was not widely influential in business until Michael Porter published *Competitive Strategy* (Free Press, 1980), applying the model to company strategy. While there have been extensions and variations of the SCP model, such as the resource-based approach,² Porter's framework is probably still the most widely used for thinking about strategy.

According to Porter, the intensity of competition in an industry is determined by five forces: the threat of new entry, pressure from substitute products, the bargaining power of buyers, that of suppliers, and the degree of rivalry among existing competitors. Companies need to choose strategies that build competitive advantages to mitigate or change the pressure of these forces and achieve superior profitability. Because the five forces differ by industry, and because companies within the same industry can pursue different strategies, there can be significant variation in ROIC across and within industries.

Exhibit 8.1 underlines the importance of industry structure to ROIC. It compares the median return on invested capital over more than 20 years in two sectors: branded consumer goods and extraction industries (such as mining and oil and gas). Consumer goods have earned consistently higher ROICs than extraction companies. In addition, the returns of extraction-based companies have been highly volatile.

The reason for this difference in the industries' performances lies mainly in differences between their competitive structures. In the branded-consumer-goods industry, companies such as Nestlé, Procter & Gamble, and Unilever developed long-lasting brands with high consumer loyalty that made it difficult for new competitors to gain a foothold. Building on these advantages, these companies were able to increase their returns on capital from around 20 percent in the mid-1990s to roughly 30 percent two decades later, despite challenges to traditional brands from new market entrants. One example is

¹ We introduce *units* to encourage discussion regarding price, cost, and volume. The formula, however, is not specific to manufacturing. Units can represent the number of hours billed, patients seen, transactions processed, and so on.

² See, for example, J. Barney, "Resource-Based Theories of Competitive Advantage: A Ten-Year Retrospective on the Resource-Based View," *Journal of Management* 27 (2001): 643–650.

130 RETURN ON INVESTED CAPITAL

EXHIBIT 8.1 Company Profitability: Industry Matters



Source: Corporate Performance Analytics by McKinsey.

the competition faced by Procter & Gamble’s Gillette shaving business from challengers such as Harry’s and Dollar Shave Club.³

In extraction industries, one company’s products are the same as another’s (iron ore is iron ore, with minor quality differences), so prices are the same across the industry at any point in time. In addition, the companies use the same capital-intensive processes to extract their products. As a result, the median company in the industry doesn’t have a competitive advantage, and returns are low, averaging only 9 percent during this 20-year period. It is worth noting that imbalances in supply and demand can lead to cycles in product price and ROIC, as was the case with a long run-up in commodity prices in the years leading up to 2005. In the end, though, competition leads to low ROIC on average.

Industry structure is by no means the only determinant of ROIC, as the significant variation among companies within industries shows. Consider the global automotive industry, which has been plagued by overcapacity for years. Still, the industry’s low returns do not deter new entrants, whether from different geographies (such as South Korean automakers’ entry into the U.S. and European markets) or due to the emergence of new technologies (such as electric-vehicle producers, including Tesla). Add in the difficulties that some manufacturers encounter in trying to close unionized plants, and it’s easy to see how overcapacity keeps returns across the sector low. Only a few manufacturers, such as BMW, can parlay their premium brands and higher quality into higher prices and superior returns on capital compared with other

³ Unilever acquired Dollar Shave Club in 2016.

manufacturers. Or consider the highly competitive European airline industry, where most players typically generate returns very close to their cost of capital—and occasionally below it. Nevertheless, Ryanair earns superior returns, thanks to its strategy of strictly point-to-point connections between predominantly secondary airports at the lowest cost in the industry.

Finally, industry structure and competitive behavior aren’t fixed; they’re subject to shocks from technological innovation, changes in government regulation, and competitive entry—any or all of which can affect individual companies or an entire industry. We show in this chapter’s final section that the software and pharmaceutical industries, for example, consistently earn high returns. However, the leading companies may not be the same in 20 years, just as many of today’s leaders were not major players or didn’t even exist 20 years ago.

COMPETITIVE ADVANTAGE

Competitive advantage derives from some combination of ten sources, defined in Exhibit 8.2. Of these, five allow companies to charge a price premium, four contribute to cost and capital efficiency, and one (often referred to as “network economies”) combines price and cost advantages to produce increasing returns to scale. It is important to understand that competitive advantage drawn from these sources is enjoyed not by entire companies but by particular business units and product lines. This is the only level of competition at which the concept of competitive advantage affords you any real traction in strategic thinking; even if a company sells soup or dog food exclusively, it may still have individual businesses and product lines with very different degrees of competitive advantage and therefore different returns on invested capital.

EXHIBIT 8.2 Sources of Competitive Advantage

Price premium	Cost and capital efficiency
Innovative products: Difficult-to-copy or patented products, services, or technologies	Innovative business method: Difficult-to-copy business method that contrasts with established industry practice
Quality: Customers willing to pay a premium for a real or perceived difference in quality over and above competing products or services	Unique resources: Advantage resulting from inherent geological characteristics or unique access to raw material(s)
Brand: Customers willing to pay a premium based on brand, even if there is no clear quality difference	Economies of scale: Efficient scale or size for the relevant market
Customer lock-in: Customers unwilling or unable to replace a product or service they use with a competing product or service	Scalable product/process: Ability to add customers and capacity at negligible marginal cost
Rational price discipline: Lower bound on prices established by large industry leaders through price signaling or capacity management	
Increasing returns to scale: Scalable products that offer increasing value to customers with scale	